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ANNOTATED CHECKLIST OF THE AMPHIBIANS AND REPTILES OF CUZCO AMAZONICO, PERU

WILLIAM E. DUELLMAN[1] AND ANTONIO W. SALAS[2]

The Reserva Cuzco Amazónico consists of 10,000 ha on the north bank of the Río Madre de Dios, about 15 km east-northeast of Puerto Maldonado, Departamento de Madre de Dios, Peru. The terrain is nearly level at an elevation of about 200 m. The alluvial soil supports lowland tropical rainforest that is subjected to a dry season from June through October. The area was described in detail by Duellman and Koechlin (1991).

Herpetological work began at Cuzco Amazónico more than a decade ago. During the past few years, four new taxa have been described from the site; these are *Hyla allenorum* and *Hyla koechlini* (Duellman and Trueb, 1989), *Phyllomedusa atelopoides* (Duellman et al., 1988), and *Scarthyla ostinodactyla* (Duellman and de Sá, 1988). Other reports based on collections from Cuzco Amazónico include the taxonomic status of *Hyla favosa* (Titus et al., 1989), the biology of *Edalorhina perezi* (Duellman and Morales, 1990), and the lizard community (Duellman, 1987). Data on the herpetofauna at Cuzco Amazónico were incorporated into analyses of anuran species diversity (Duellman, 1988) and community structure of neotropical herpetological assemblages (Duellman, 1989). The purpose of this report is to provide an updated, annotated checklist of the species of amphibians and reptiles known to occur at Cuzco Amazónico.

[1]Curator, Division of Herpetology, Museum of Natural History, and Professor, Department of Systematics and Ecology, The University of Kansas, Lawrence, Kansas 66045-2454, USA.

[2]Investigador Asociado, Departamento de Herpetología, Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Apartado 14-0434, Lima 14, Peru.

COLLECTIONS AND METHODS

The first collections of amphibians and reptiles were made at Cuzco Amazónico by J. E. Cadle in June and July 1979 and by T. J. Papenfuss in July 1981; these specimens are deposited in the Museum of Vertebrate Zoology, University of California, Berkeley, USA. Cadle also collected there in November 1983 and February–March 1984; the resulting collections were deposited in the Museum of Vertebrate Zoology and the National Museum of Natural History, USA. Mark W. Chandler collected in the reserve in October–November 1988, and he and Víctor R. Morales in February–March 1989; the specimens are in the Redpath Museum at McGill University, Canada, and the Museo de Historia Natural, Universidad Nacional Mayor de San Marcos (MHNSM), Peru, which also contains a small collection made by Joseph B. Slowinski in August 1988. Jaime Villa collected amphibians and reptiles at Cuzco Amazónico in December 1984 and January 1985; specimens were deposited in the Museum of Natural History at The University of Kansas (KU), USA.

Field work by personnel from The University of Kansas was initiated at Cuzco Amazónico by W. E. Duellman in October 1983. Supported by grants from the National Geographic Society (3196-85 and 3405-86) he returned to the site in January–March 1986 and November–December 1986. During these trips he was accompanied or joined by Patricia A. Burrowes, Alan Channing, Rafael de Sá, David M. Hillis, Linda R. Maxson, Víctor R. Morales, John E. Simmons, Tom A. Titus, and Linda Trueb. Duellman and Bryant W. Buchanan worked at Cuzco Amazónico in October 1988; Duellman and William R. Branch collected there in November–December 1989, and Buchanan, Mary E. Gray, and Erik R. Wild worked on specific herpetological projects there for varying lengths of time between December 1989 and April 1990. Collections resulting from these field studies were divided between KU and MHNSM.

In 1989 a multidisciplinary biodiversity project (BIOTROP) was undertaken at Cuzco Amazónica. Herpetologists associated with this project in June–July 1989 were W. E. Duellman, David A. Kizirian, Linda Trueb, and Erik R. Wild from KU, and Víctor R. Morales and Helena R. Sisniegas from MHNSM. Those working on the project in January–March 1990 were Luis A. Coloma, W. E. Duellman, Darrel R. Frost, and John J. Wiens from KU, and Fernando M. Cuadros, Javier Icochea, and Antonio W. Salas from MHNSM. Also, we were joined for 10 days by Ignacio de la Riva from the Instituto Doñana in Spain. All collections from the biodiversity project were divided between KU and MHNSM.

Beginning in January 1986 four trails were opened and numbered every 50 m. In March 1989 two study zones were surveyed, trails were cut, and 100

quadrats 20 × 20 m were laid out in the study zones. (See Duellman and Koechlin, 1991, for map and details.) Most specimens collected or observed at Cuzco Amazónico are noted as to meter number on trails or quadrat number in study zones, microhabitat, date, and hour. Collecting effort was about equal between day and night and usually consisted of one or two persons walking trails. In June and July 1989, drift fences with pitfall traps were installed in two quadrats in each study zone. As collections accumulated and collectors became familiar with the species, fewer specimens were collected; instead their presence with respect to the above parameters were noted. Tortoises and some large snakes were captured, weighed, measured, marked, and subsequently released at the place of capture. Only one of these, a *Corallus enydris*, was recaptured.

THE HERPETOFAUNA

In the following checklist the taxonomy follows Frost (1985) for amphibians, Peters and Orejas-Miranda (1970) and Peters and Donoso-Barros (1970) as updated by Vanzolini (1986) for squamates, and King and Burke (1989) for crocodilians and turtles.

The herpetofauna at Cuzco Amazónico is known to consist of 64 species of amphibians (all anurans) and 81 species of reptiles (3 crocodilians, 5 turtles, 1 amphisbaenian, 23 lizards, and 49 snakes) for a total of 145 species (Table 1). Undoubtedly, several other species occur in the reserve. For example, three other species of frogs (*Hyla geographica*, *Hyla lanciformis*, and *Phyllomedusa bicolor*) have been found at Lago Sandoval, about 5 km southwest of Cuzco Amazónico, and a caecilian (*Siphonops annulatus*) was found at Puerto Maldonado, 15 km west-southwest of Cuzco Amazónico. Probably snakes are the least well sampled group of the herpetofauna; species such as *Micrurus spixii* and *Bothriopsis bilineata* certainly occur there. Despite intensive field work at Cuzco Amazónico in 1986–1990, four species (*Bufo glaberrimus*, *Hyla sarayacuensis*, *Osteocephalus leprieuri*, *Pseustes sulphureus*), each represented by one or two specimens that were collected in 1979–1983, have not been retaken.

During recent years, amphibians and reptiles have been studied at three other sites in the Departamento de Madre de Dios. Comparison of the herpetofauna at Cuzco Amazónico with those from Cocha Cashu in the Parque Nacional Manú (Rodriguez and Cadle, 1990), Pakitza in the Parque Nacional Manú (V. R. Morales, pers. comm.), and the Reserva Tambopata (R. W. McDiarmid, pers. comm.) indicates that many species occur at all four sites. However, each site has species that are unknown at the other sites. Not only the occurrence, but also the abundance of certain species seem to reflect differences in habitat at the four sites. Also, some species (e.g., *Bolitoglossa altamazonica*, *Agalychnis craspedopus*, *Phyllonastes myrmecoides*,

Ophryoessoides aculeatus, *Enyalioides palpebralis*) seem to reach the southern limits of their distributions in the Parque Nacional Manú; localities (Cocha Cashu and Pakitza) where these species have been found are about 315 and 250 km, respectively, WNW of Cuzco Amazónico.

The application of some specific names of anurans is tentative pending revisionary studies in progress. These include *Bufo typhonius* (Hoogmoed, 1990), *Colostethus marchesianus* (V. R. Morales, pers. comm.), *Epipedobates pictus* (C. W. Myers, pers. comm.), *Adenomera andreae* and *A. hylaedactyla*, and *Leptodactylus wagneri* (R. W. Heyer, pers. comm.). Because of the significance of their occurrence at Cuzco Amazónico or because of their systematic status, 12 species deserve comment.

Hyla schubarti Bokermann, 1963

This small tree frog was named from Rondônia, Brazil and has not been reported previously from Peru. The species is not common at Cuzco Amazónico. Individuals were found throughout the forest, but no breeding aggregations were encountered.

Hyla species A

This small species is a member of the *Hyla parviceps* group known from Cuzco Amazónico and Tambopata. It is being described by Roy W. McDiarmid and Reginald Cocroft.

Ololygon chiquitana De la Riva, 1990

This recently described species (De la Riva, 1990) is represented from Cuzco Amazónico by a single female, which was compared with the type series from Puerto Alamacén, Departamento de Santa Cruz, Bolivia. We also have examined specimens of this species from Tambopata, Peru.

Ololygon pedromedinai Henle, 1991

Henle (1991) named this species from Tres Chimbadas, Río Tambopata, Peru, and designated specimens from Cuzco Amazónico as paratypes. The species is known from several localities in the Departamento Madre de Dios.

Ololygon species A

An unnamed species of *Ololygon* that is similar to *O. cruentomma* is abundant at several localities in Madre de Dios. It is being described by Duellman and John J. Wiens.

Phyllomedusa species A

This unnamed species of *Phyllomedusa* is similar to *P. tarsius* and is known from several localities in Bolivia, southwestern Brazil, and southern Ecuador. It is being described by David C. Cannatella and Ronald I. Crombie.

Eleutherodactylus cruralis (Boulenger, 1902)

Specimens of this species from the lowlands of southeastern Peru have been reported previously as *E. granulosus* (Boulenger, 1903), a name now considered to be a junior synonym of *E. cruralis* (Lynch, 1989).

Pseudis paradoxa (Linnaeus, 1758)

Although widespread in eastern Amazonia, specimens from Cuzco Amazónico represent the first locality for this aquatic frog in Peru. All specimens were found in a semi-permanent pond just to the north of the lodge.

Pseudogonatodes guianensis Parker, 1935

This small gekkonid has been reported previously from Peru from the vicinity of Iquitos (Dixon and Soini, 1975; Lescure and Gasc, 1986) and from Cocha Cashu (Rodriquez and Cadle, 1990). Cuzco Amazónico represents the southernmost locality for the genus.

Mabuya bistriata (Spix, 1825)

Reboucas-Spieker (1981) noted that *Mabuya bistriata* is the name applicable to Amazonian *Mabuya* formerly recognized as *M. mabouya* (Lacépède, 1788).

Ptychoglossus brevifrontalis Boulenger, 1912

This species has been reported previously from Peru only from the region of Iquitos (Dixon and Soini, 1975; Lescure and Gasc, 1986).

Leptotyphlops diaplocius Miranda-Ribeiro, 1969

Two specimens from Cuzco Amazónico represent the first Peruvian specimens reported since the original description based on specimens from northeastern Peru (Orejas-Miranda, 1969). Nascimento et al. (1988) reported the species from Amazonas and Rondônia, Brazil.

Table 1. Amphibians and Reptiles of Cuzco Amazónico, Peru. Abbreviations.—Abundance: C = Common; species usually encountered within first 100 person/hr of field work (for amphibians, this measure applicable only in the rainy season). R = Rare; species represented by five or fewer specimens and/or observations. U = Uncommon; species usually encountered within first 200 person/hr of field work. Diel Activity: DH = Diurnal and heliophylic; DS = Diurnal shade; N = Nocturnal; ND = Nocturnal and diurnal. Habitat Utilization: A = Aquatic; AM = Aquatic margin; B = Bushes (<1.5 m); E = Edificarian; F = Fossorial; G = Ground; L = Logs; LL = Leaf litter; TB = Tree buttresses; TL = Tree limbs; TT = Tree trunks. * = observation only.

Taxon	Abundance	Diel	Habitat
	AMPHIBIA		
Bufonidae			
Bufo glaberrimus	R	N	G
Bufo marinus	C	N	G
Bufo typhonius	C	ND	LL
Dendrobatidae			
Colostethus marchesianus	C	DS	LL
Epipedobates femoralis	U	DS	L, LL
Epipedobates pictus	C	DS	L, LL
Hylidae			
Hyla allenorum	R	N	B, TL
Hyla boans	U	N	TL
Hyla brevifrons	C	N	B, TL
Hyla calcarata	U	N	B, TL
Hyla fasciata	C	N	B
Hyla granosa	C	N	B, TL
Hyla koechlini	C	N	B
Hyla leali	C	N	B
Hyla leucophyllata	C	N	B
Hyla marmorata	R	N	TL
Hyla parviceps	C	N	B
Hyla punctata	R	N	B
Hyla rhodopepla	C	N	B
Hyla sarayacuensis	R	N	B
Hyla schubarti	U	N	B, TL
Hyla sp. A.	R	N	B
Ololoygon chiquitana	R	N	B
Ololygon garbei	U	N	B, TT
Ololygon pedromedinai	C	DS, N	B
Ololygon rubra	U	N	B, E, G
Ololygon sp. A.	C	N	B
Osteocephalus leprieuri	R	N	TL
Osteocephalus taurinus	C	N	TT
Phrynohyas coriacea	C	N	TL

Table 1. continued

Taxon	Abundance	Diel	Habitat
Phrynohyas venulosa	U	N	E, TT
Phyllomedusa atelopoides	U	N	G
Phyllomedusa palliata	U	N	B
Phyllomedusa tomopterna	C	N	TL
Phyllomedusa vaillanti	C	N	B, TL
Phyllomedusa sp. A.	U	N	TL
Scarthyla ostinodactyla	C	DS, N	B, TB
Sphaenorhynchus lacteus	U	N	B
Leptodactylidae			
Adenomera andreae	C	DS, N	G, LL
Adenomera hylaedactyla	C	DS, N	G, LL
Ceratophrys cornuta	C	N	LL
Edalorhina perezi	C	DS	L, LL
Eleutherodactylus altamazonicus	R	N	B
Eleutherodactylus cruralis	R	N	G
Eleutherodactylus fenestratus	C	N	B, E, G
Eleutherodactylus imitatrix	U	DS, N	B, LL
Eleutherodactylus ockendeni	R	N	B
Eleutherodactylus peruvianus	U	DS, N	B, LL
Eleutherodactylus toftae	C	DS, N	B, LL
Leptodactylus bolivianus	U	N	G
Leptodactylus knudseni	R	N	G
Leptodactylus mystaceus	C	N	G
Leptodactylus pentadactylus	R	N	G
Leptodactylus podicipinus	C	N	AM
Leptodactylus rhodomystax	C	N	G
Leptodactylus wagneri	U	DS, N	AM
Lithodytes lineatus	R	N	G
Physalaemus petersi	R	N	LL
Microhylidae			
Chiasmocleis ventrimaculata	U	N	B, LL
Ctenophryne geayi	R	N	F, LL
Elachistocleis ovalis	U	N	G, LL
Hamptophryne boliviana	C	N	B, G, LL
Pipidae			
Pipa pipa	U	DS, N	A
Pseudidae			
Pseudis paradoxa	R	N	A
REPTILIA			
AMPHISBAENIA			
Amphisbaenidae			
Amphisbaena alba	R	?	F, G

Table 1. continued

Taxon	Abundance	Diel	Habitat
	CROCODYLIA		
Alligatoridae			
*Caiman crocodilus**	C	N	A
Melanosuchus niger	R	N	A
*Paleosuchus trigonatus**	U	N	A
	SQUAMATA: SAURIA		
Gekkonidae			
Gonatodes humeralis	C	DS	B, E, TT
Pseudogonatodes guianensis	R	DS	LL
Thecadactylus rapicauda	U	N	E, TT
Polychridae			
Anolis fuscoauratus	C	DS	B, G
Anolis ortonii	R	DS	G, TB
Anolis punctatus	U	DH	B, TL, TT
Polychrus marmoratus	R	DH	TL
Scincidae			
Mabuya bistriata	C	DH	G, L
Teiidae			
Ameiva ameiva	C	DH	G, L
Bachia trisanale	U	DS	G, LL
Cercosaura ocellata	U	DH	LL
Dracaena guianensis	R	DH	AM, TL
*Iphisa elegans**	R	DS	L, LL
Kentropyx altamazonicus	U	DH	G
Kentropyx pelviceps	C	DH	G, L
Prionodactylus eigenmanni	U	DS	LL
Prionodactylus oshaugnessyi	U	DS	LL
Ptychoglossus brevifrontalis	R	DS	LL
*Tupinambis nigropunctatus**	U	DS	G
Tropiduridae			
Plica plica	U	DH	TB, TT
Plica umbra	C	DH	TT
Stenocercus roseiventris	C	DH	G, L
Uracentron flaviceps	R	DH	TL, TT
	SQUAMATA: SERPENTES		
Aniliidae			
Anilius scytale	R	N	F
Boidae			
Boa constrictor	R	DH, N	G
Corallus enydris	U	N	TL

Table 1. continued

Taxon	Abundance	Diel	Habitat
Epicrates cenchria	U	DH, N	B, G
Eunectes murinus	R	DH, N	A
Colubridae			
Atractus elaps	R	N	F
Atractus flammigerus	R	N	G
Atractus major	C	N	B, G
Chironius carinatus	U	DH	G
Chironius fuscus	C	DH	G
Chironius multiventris	R	DH	G
Chironius scurrulus	R	DH	G
Clelia clelia	R	N	G
Dipsas catesbyi	C	N	B
Dipsas indica	U	N	B, TL
Dipsas variegata	R	N	TL
Drepanoides anomalus	U	N	G
Drymarchon corais	R	DH	G
Drymobius rhombifer	U	DH	G
Drymoluber dichrous	U	DH	G
Helicops angulatus	U	N	A
Helicops polylepis	R	N	A
Imantodes cenchoa	C	N	B, TL
Imantodes lentiferus	U	N	B
Leptodeira annulata	U	N	B, TL
Leptophis ahaetulla	U	DH	B, E
Liophis cobella	R	DH	AM
Liophis reginae	C	DH, N	AM, B
Liophis typhlus	R	N	B
Oxybelis aeneus	R	DH	B
Oxybelis boulengeri	C	DH	B, TL
Oxyrhopus formosus	R	N	G
Oxyrhopus melanogenys	U	N	G
Oxyrhopus petola	U	N	G
Philodryas viridissimus	R	DH	G
Pseudoboa coronata	R	N	G
Pseudoeryx plicatilis	R	DH	A
Pseustes sulphureus	R	DH	G
Rhadinaea occipitalis	U	DH	G
Siphlopis cervinus	U	N	G, L
Tantilla melanocephala	R	DS	G
Xenodon severus	R	N	G
Xenopholis scalaris	U	N	G
Elapidae			
Micrurus annellatus	R	DS	G
Micrurus lemniscatus	R	N	G

Table 1. continued

Taxon	Abundance	Diel	Habitat
Micrurus surinamensis	R	N	A
Leptotyphlopidae			
Leptotyphlops diaplocius	R	DS	LL
Viperidae			
Bothrops atrox	U	DS, N	B, G
Lachesis muta	U	DS, N	G
TESTUDINES			
Chelidae			
Phrynops gibbus	R	DS, N	A
Platemys platycephala	U	DH, N	A, G
Pelomedusidae			
*Podocnemis unifilis**	U	DH	A
Kinosternidae			
Kinosternon scorpioides	R	N	A
Testudinidae			
Geochelone denticulata	U	DH, DS	G

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SUMMARY

One hundred and forty-five species of amphibians and reptiles (64 anurans, 3 crocodilians, 5 turtles, 1 amphisbaenian, 23 lizards, and 49 snakes) are reported from the Reserva Cuzco Amazónico, Departamento de Madre de Dios, Peru. *Hyla schubarti*, *Ololygon chiquitana*, and *Pseudis paradoxa* are reported from Peru for the first time; *Pseudogonatodes guianensis*, *Ptychoglossus brevifrontalis*, and *Leptotyphlops diaplocius* are reported for the first time from southern Peru. Three unnamed species of frogs are included in the fauna. The herpetofauna at Cuzco Amazónico has many species in common with the Reserva Tambopata and sites (Cocha Cashu and Pakitza) in the Parque Nacional Manú; however, some species are known from only one or two of the sites.

RESUMEN

Se reportan ciento cuarenta y cinco especies de anfibios y reptiles (64 anuros, 3 cocodrilos, 5 tortugas, 1 anfisbénido, 23 lagartijas y 49 serpientes) de la Reserva Cuzco Amazónico, Departamento de Madre de Dios, Peru. *Hyla schubarti*, *Ololygon chiquitana*, y *Pseudis paradoxa* se reportadan del Perú por primera vez; *Pseudogonatodes guianensis*, *Ptychglossus brevifrontalis* y *Leptotyphlops diaplocius* se reportan por la primera vez del sur del Perú. Tres especies de anuros sin nombres son incluidas en la fauna. La herpetofauna en Cuzco Amazónica tiene muchas especies en común con la Reserva Tambopata y sitios (Cocha Cashu y Pakitza) en el Parque Nacional Manú; sin embargo, algunas especies son conocidas de solamente uno o dos de los sitios.

LITERATURE CITED

DE LA RIVA, I. 1990. Una especie nueva de Ololygon (Anura: Hylidae) procedente de Bolivia. Rev. Española Herpetol. 4:81–86.

DIXON, J. R., AND P. SOINI. 1975. The reptiles of the upper Amazon Basin, Iquitos region, Peru. I. Lizards and amphisbaenians. Contrib. Biol. Geol. Milwaukee Publ. Mus. 4:1–58.

DUELLMAN, W. E. 1987. Lizards in an Amazonian rain forest community: resource utilization and abundance. Natl. Geog. Res. 3:489–500.

DUELLMAN, W. E. 1988. Patterns of species diversity in anuran amphibians in the American tropics. Ann. Missouri Bot. Gard. 75:79–104.

DUELLMAN, W. E. 1989. Tropical herpetofaunal communities: patterns of community structure in neotropical forests. Pp. 61–88 *in* M. L. Harmelin-Vivien and F. Bourlière (eds.), *Vertebrates in Complex Tropical Systems*. New York: Springer-Verlag.

DUELLMAN, W. E., J. E. CADLE, AND D. C. CANNATELLA. 1988. A new species of terrestrial *Phyllomedusa* (Anura: Hylidae) from southern Peru. Herpetologica 44:91–95.

DUELLMAN, W. E., AND R. DE SÁ. 1988. A new genus and species of South American hylid frog with a highly modified tadpole. Trop. Zool. 117–136.

DUELLMAN, W. E., AND J. E. KOECHLIN. 1991. The Reserva Cuzco Amazónico, Peru: biological investigations, conservation, and ecotourism. Occas. Pap. Mus. Nat. Hist. Univ. Kansas 142:1–38.

DUELLMAN, W. E., AND V. R. MORALES. 1990. Variation, distribution, and life history of *Edalorhina perezi* (Amphibia, Anura, Leptodactylidae). Stud. Neotrop. Fauna Envir. 25:19–30.

DUELLMAN, W. E., AND L. TRUEB. 1989. Two new treefrogs of the *Hyla parviceps* group from the Amazon Basin in southern Peru. Herpetologica 45:1–10.

FROST, D. R. (ed.) 1985. *Amphibian Species of the World*. Lawrence, Kansas: Assoc. Syst. Coll.

HENLE, K. 1991. *Ololygon pedromedinae* sp. nov., ein neuer knickzehenlaubfrosch (Hylidae) aus Peru. Salamandra 27:76–82.

HOOGMOED, M. S. 1990. Biosystematics of South American Bufonidae, with special reference to the *Bufo "typhonius"* group. Pp. 113–123 *in* G. Peters and R. Hutterer (eds.), *Vertebrates in the Tropics*. Bonn: Museum Alexander Koenig.

KING, F. W. AND R. L. BURKE (eds.). 1989. *Crocodilian, Tuatara, and Turtle Species of the World*. Washington, DC: Assoc. Syst. Coll.

LESCURE, J., AND J. P. GASC. 1986. Partage de l'Espace forestier par les amphibiens et les reptiles en Amazonie du Nord-Ouest. Caldasia 15:707–723.

LYNCH, J. D. 1989. Intrageneric relationships of mainland *Eleutherodacthylus* (Leptodactylidae). I. A review of the frogs assigned to the *Eleutherodactylus discoidalis* species group. Contrib. Biol. Geol. Milwaukee Public Mus. 79:1–25.

NASCIMENTO, F. P. DO, T. C. SAUER DE ÁVILA PIRES, AND O. R. DA CUNHA. 1988. Répteis squamata de Rondônia e Mato Grosso colectados através do progama POLONOROESTE. Bol. Mus. Para. Emílio Goeldi 4:21–66.

OREJAS-MIRANDA, B. R. 1969. Tres nuevos Leptotyphlops (Reptilia: Serpentes). Comun. Zool. Mus. Hist. Nat. Montevideo 10 (124)1–111.

PETERS, J. A., AND R. DONOSO-BARROS. 1970. Catalogue of the neotropical Squamata: Part II. Lizards and amphisbaenians. Bull. U.S. Natl. Mus. 297:1–293.

PETERS, J. A. AND B. OREJAS-MIRANDA. 1970. Catalogue of the neotropical Squamata: Part I. Snakes. Bull. U.S. Natl. Mus. 297:1–347.

REBOUCAS-SPIEKER, R. 1981. Sobre uma nova espécie de *Mabuya* do nordeste do Brasil (Sauria, Scincidae). Pap. Avul. Zool. São Paulo 34:121–123.

RODRIGUEZ, L. B., AND J. E. CADLE. 1990. A preliminary of the herpetofauna of Cocha Cashu, Manu National Park, Peru. Pp. 410–425 *in* A. H. Gentry (ed.), *Four Neotropical Rainforests*. New Haven: Yale Univ. Press.

TITUS, T. A., D. M. HILLIS, AND W. E. DUELLMAN. 1989. Color polymorphism in neotropical treefrogs: an allozymic investigation of the taxonomic status of *Hyla favosa* Cope. Herpetologica 45:17–23.

VANZOLINI, P. E. 1986. Addenda and corrigenda to the catalogue of neotropical Squamata. Smithsonian Herpetol. Info. Ser. 70:1–25.